



Lack of evidence for stating 'spinal source' of pain in EXPOSS study

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ABSTRACT

We read with interest the recent research paper 'A study exploring the prevalence of Extremity Pain of Spinal Source (EXPOSS)' by Rosedale et al. [1]. This study highlights some interesting opportunities for physical therapists and other clinicians practicing Mechanical Diagnosis and Therapy (MDT). However, we would like to address some issues that became apparent on reading this paper.

KEYWORDS

MDT; Mckenzie; extremity pain; equipose; post hoc; letter to the editor; non comparability; spinal source

Dear Editor,

We read with interest the recent research paper 'A study exploring the prevalence of Extremity Pain of Spinal Source (EXPOSS)' by Rosedale et al. [1]. This study highlights some interesting opportunities for physical therapists and other clinicians practicing Mechanical Diagnosis and Therapy (MDT). However, we would like to address some issues that became apparent on reading this paper.

This trial appears to suggest that a significant proportion (43.5%) of people presenting with pain felt in the extremities may improve with repeated or sustained spinal movements. This post hoc reasoning did not take into account the natural history of disease or regression to the mean, which may explain some of the results observed [2]. Besides, even if one could confirm the efficacy of the therapy (repeated spinal loading strategies affecting extremity pain), it would be insufficient to identify a 'spinal source' of pain. Bayesian theories of pain describe it as the result of an inferential process integrating multisensory cues [3]. Therefore, pain improvement may be due to the modification of a nociceptive source, or a change in any other part of the multisensory cues.

The MDT process consists of a series of loading strategies (movements and static positions) whilst reporting any symptomatic and mechanical responses during, and after cessation of the loading strategy. It seems logical to infer that this process of examination may induce expectations in some people and thus in doing so may play a role in changing the pain presentation [4]. Conditioning may be involved as well, the MDT process being highly at odds to induce operant conditioning [5, 6] by 'punishing' the patient with another set of movements or different directions of movement, if the initial movement does not induce a change in the pain location or intensity.

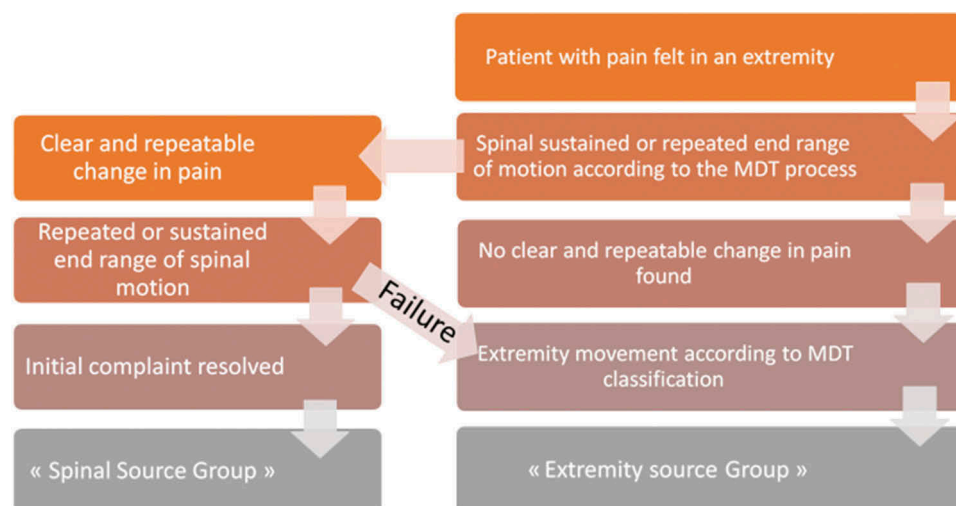
One may also question the lack of clinical equipose of the clinicians involved in the study. Clinical equipose is

the assumption that every treatment option has the same probability of success [7]. Each therapist had an a priori expectation of outcome. The treating physical therapists were aware of the study protocol and one could suggest that each had a strong interest in the outcome of the study showing a positive response to spinal movements with patients presenting with extremity pain. There is adequate evidence in the literature showing that non-equipose has a strong effect on patient outcomes [8].

Psychological factors such as kinesiphobia, catastrophizing, coping strategies, self-efficacy may play an important role in the patients' presentation. Improving one's overall presentation by spinal motion is thus insufficient to provide evidence of a 'spinal source' of nociception. Changes in pain presentation may be due to multifactorial response to a patient confidently moving distant to the affected part. Thus, a response to general motion versus specific treatment.

We are also surprised that the hip and shoulder were included in the study as part of the extremity. It is well documented in the literature (as the authors themselves note) that the lumbar spine and hip as well as the cervical spine and shoulder share common overlapping somatic referral patterns. Our biggest concern is that the MDT examination and treatment procedures in the lumbar spine not only move the spine to end range but also the hip, which raises the question how did they know this was the spine and not just the hip responding, when 71% responded to so-called spinal motion procedures? The same question arises for the cervical spine and shoulder where 47.6% were classified as spinal responders; again the MDT procedures move both the spine and the scapula-thoracic region, thus directly affecting the shoulder. The authors do not address this in their write up.

In closing we would like to address the comparison the authors made between the 'spinal source' group



and the 'extremity source' group. The authors repeatedly pointed out that 'Spinal source group' had more favorable outcome than the other group. But, due to the algorithm (Figure 1) used by the authors, the first group is only composed of patients that achieved successful results. If the initial complaint was not fully resolved with just spine movements, the patients were transferred into the extremity source group. Thus, it is not surprising to find that the 'extremity source group' had a significantly worse outcome.

To conclude, future studies should assess whether including MDT screening of the spine in the management of extremity pain improve outcome of therapies. Finding positive results would raise the probability that the subgroup seeming to respond to spine loading identified in this study really has a spinal source of pain and not just improve due to natural history and nonspecific treatment. Care should be taken in interpreting results considering the impossibility to adequately ward off biases of non-equipose.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributor

Anthony Halimi is a physiotherapist involved in several learned society like the Pain Group of Interest of the French Physiotherapy Association. He teaches about pain

management in initial and continuing education and gives lectures across the France.

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